

**459A.302 Settled open feedlot effluent basins — construction requirements.**

A settled open feedlot effluent basin required to be constructed pursuant to a construction permit issued pursuant to [section 459A.205](#) shall meet all of the following requirements:

1. *a.* Prior to constructing a settled open feedlot effluent basin, the site for the basin shall be investigated for a drainage tile line by the owner of the open feedlot operation. The investigation shall be made by digging a core trench to a depth of at least six feet deep from ground level at the projected center of the berm of the basin. If a drainage tile line is discovered, one of the following solutions shall be implemented:

(1) The drainage tile line shall be rerouted around the perimeter of the basin at a distance of at least twenty-five feet horizontally separated from the outside edge of the berm of the basin. For an area of the basin where there is not a berm, the drainage tile line shall be rerouted at least fifty feet horizontally separated from the edge of the basin.

(2) The drainage tile line shall be replaced with a nonperforated tile line under the basin floor. The nonperforated tile line shall be continuous and without connecting joints. There must be a minimum of three feet between the nonperforated tile line and the basin floor.

*b.* A written record of the investigation shall be submitted as part of the construction certification required under [section 459A.207](#).

2. *a.* The settled open feedlot effluent basin shall be constructed with a minimum separation of two feet between the top of the liner of the basin and the seasonal high-water table.

*b.* If a drainage tile line around the perimeter of the basin is installed a minimum of two feet below the top of the basin liner to artificially lower the seasonal high-water table, the top of the basin's liner may be a maximum of four feet below the seasonal high-water table. The seasonal high-water table may be artificially lowered by gravity flow tile lines or other similar system. However, the following shall apply:

(1) Except as provided in subparagraph (2), an open feedlot operation shall not use a nongravity mechanical system that uses pumping equipment.

(2) If the open feedlot operation was constructed before July 1, 2005, the operation may continue to use its existing nongravity mechanical system that uses pumping equipment or it may construct a new nongravity mechanical system that uses pumping equipment. However, an open feedlot operation that expands the area of its open feedlot on or after April 1, 2011, shall not use a nongravity mechanical system that uses pumping equipment.

3. Drainage tile lines may be installed to artificially lower the seasonal high-water table at a settled open feedlot effluent basin, if all of the following conditions are satisfied:

*a.* A device to allow monitoring of the water in the drainage tile lines and a device to allow shutoff of the flow in the drainage tile lines are installed, if the drainage tile lines do not have a surface outlet accessible on the property where the settled open feedlot effluent basin is located.

*b.* Drainage tile lines are installed horizontally at least twenty-five feet away from the settled open feedlot effluent basin. Drainage tile lines shall be placed in a vertical trench and encased in granular material which extends upward to the level of the seasonal high-water table.

4. A settled open feedlot effluent basin shall be constructed with at least four feet between the bottom of the basin and a bedrock formation.

5. A settled open feedlot effluent basin constructed on a floodplain or within a floodway of a river or stream shall comply with rules of the department.

6. The liner of a settled open feedlot effluent basin shall comply with all of the following:

*a.* The liner shall comply with any of the following permeability standards:

(1) The liner shall be constructed to have a percolation rate that shall not exceed one-sixteenth inch per day at the design depth of the basin as determined by percolation tests conducted by the professional engineer. If a clay soil liner is used, the liner shall be constructed with a minimum thickness of twelve inches or the minimum thickness necessary to comply with the percolation rate in [this section](#), whichever is greater.

(2) The liner shall be constructed at optimum moisture content not less than ninety-five percent of the maximum density as determined by a standard five-point proctor test

performed at the site of the open feedlot operation by a professional engineer. If a clay soil liner is used, the liner shall be constructed with a minimum thickness of twelve inches.

b. If a synthetic liner is used, the liner shall be installed to comply with the percolation rate required in [this section](#).

7. The owner of an open feedlot operation using a settled open feedlot effluent basin shall inspect the berms of the basin at least semiannually for evidence of erosion. If the inspection reveals erosion which may impact the basin's structural stability or the integrity of the basin's liner, the owner shall repair the berms.

2005 Acts, ch 136, §12

Referred to in [§459A.103](#), [§459A.303](#)